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AMENDMENTS TO THE CLAIMS WITH MARKINGS TO SHOW CHANGES MADE, AND LISTING OF ALL CLAIMS WITH PROPER IDENTIFIERS

Claims 1-20 (cancelled)

21. (New) An in vitro method for expressing a heterologous gene in hepatocytes comprising:

- providing replication defective hepadnavirus particles at a titer level competent to infect hepatocytes by deleting from the S-gene of a hepadnavirus at least 200 nucleotides sequences and inserting a non-hepadnaviral DNA of up to 800 base pairs encoding a cytokine or a chemokine such that the sequences that are essential for reverse transcriptase are retained;
- infecting hepatocytes with the hepadnavirus such that the heterologous gene is delivered into the hepatocytes and expressed in the hepatocytes.

22. (New) The method of claim 21, wherein the replication defective hepadnavirus particles are one of human hepatitis B virus or duck hepatitis B virus.

23. (New) The method of claim 21, wherein expression of the cytokine or chemokine is regulated by the regulatory sequences of the S-gene.

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24. (New) The method of claim 21, wherein the heterologous gene replaces the S-gene under control of the endogenous S-promotor.

25. (New) The method of claim 21, wherein the non-hepadnaviral DNA is inserted such that one of an authentic AUG codon of the S-gene or its nucleotides encoding further amino acids of the S-protein are fused in frame to the 5' end of the heterologous gene.

26. (New) The method of claim 21, wherein the cytokine is selected from the group consisting of IFNα, IFNβ, IFNγ, TNFα, IL-12 and IL-18.

27. (New) A replication defective hepadnavirus particle in which at least 200 nucleotides of the S-gene of the hepadnavirus genome have been deleted and a non-hepadnaviral DNA of up to 800 base pairs encoding a cytokine or a chemokine have been inserted such that the sequences that are essential for reverse transcriptase are retained and the non-hepadnaviral DNA replaces the S-gene and is expressed under the control of the endogenous S-promotor; wherein the expression of the cytokine or chemokine is regulated by the regulatory sequences of the S-gene, and wherein the cytokine is selected from the group consisting of TNFα, IFNβ, IL-18, IFN-γ and IL-12.

28. (New) The method of claim 27, wherein the non-hepadnaviral DNA is inserted such that one of an authentic AUG codon of the S-gene of nucleotides encoding further amino acids of the S- protein are fused in frame to the 5' end of the heterologous gene.

29. (New) An in vitro method for producing replication defective recombinant hepadnavirus particles capable of expressing a heterologous gene in hepatocytes comprising:

- deleting at least 200 base pair sequences of an S-gene in a hepatitis B virus genome; and
- inserting a heterologous gene of up to 800 base pairs of a non-hepadnaviral DNA encoding a cytokine or a chemokine such that the sequences that are essential for reverse transcriptase are retained;
- producing a recombinant hepadnavirus by means of a helper plasmid by supplying viral gene products essential for replication;
- infecting hepatocytes with the recombinant hepadnavirus, whereby the inserted heterologous gene is delivered into the hepatocyte and expressed in the hepatocyte, wherein the replication defective recombinant hepadnavirus particles are one of human hepatitis B virus or duck hepatitis B virus.

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30. (New) The method of claim 29, wherein a hepatoma cell line is stably transfected with the helper construct and serves as a packaging cell line.

31. (New) The method of claim 29, wherein expression of the cytokine or chemokine is regulated by the regulatory sequences of the S-gene.

32. (New) The method of claim 29, wherein the non-hepadnaviral DNA replaces the S-gene and is expressed under the control of the endogenous S-promoter.

33. (New) The method of claim 29, wherein the non-hepadnaviral DNA is inserted such that one of an authentic AUG codon of the S-gene of nucleotides encoding further amino acids of the S- protein are fused in frame to the 5' end of the heterologous gene.

34. (New) The method of claim 29, wherein the cytokine is selected from the group consisting of IFNα, IFNβ, IFNγ, TNFα, IL-12 und IL-18.